

What is claimed is:

1. An array comprising a plurality of nucleic acid probes, wherein each probe in the plurality of nucleic acid probes comprises one of the sequences listed in SEQ ID Nos. 1-699,466 and wherein the plurality of nucleic acid probes of the array comprises each of
5 the sequences listed in SEQ ID Nos. 1-699,466.

2. The array of claim 1 further comprising at least one probe that is the perfect complement of one of the sequences listed in SEQ ID Nos. 1-699,466.

10 3. The array of claim 1 further comprising at least one probe that is the mismatch probe corresponding to one of the sequences listed in SEQ ID Nos. 1-699,466, wherein the mismatch position is the central position.

4. The array of claim 1 wherein said plurality of nucleic acid probes is attached to
15 a solid support.

5. The array of claim 1 wherein the array comprises a plurality of beads wherein the probes are attached to the beads and the probes on a bead consist essentially of one of the sequences listed in SEQ ID Nos. 1-699,466.

20 6. The array of claim 1 wherein the array consists of a single contiguous solid support.

7. A method of monitoring gene expression levels in a biological sample from a
25 rat comprising:
isolating nucleic acid derived from the sample;
labeling the nucleic acid;
hybridizing the labeled nucleic acid to the array of claim 1; and,

detecting the hybridization pattern, wherein the intensity of signal resulting from hybridization to probes on the array is used to monitor gene expression levels.

8. The method of claim 7 wherein said monitoring gene expression levels
5 comprises comparing gene expression levels of nucleic acids derived from two or more different samples and further comprises the step of:

comparing said hybridization patterns between said nucleic acids derived from said two or more different samples.

- 10 9. The method of claim 7 wherein the labeled nucleic acid hybridized to the array consists essentially of DNA.

10. The method of claim 7 wherein the labeled nucleic acid hybridized to the array consists essentially of RNA that is complementary to the target mRNA.

- 15 11. The method of claim 7 wherein the labeled nucleic acid hybridized to the array consists essentially of RNA that is in the sense orientation relative to the target mRNA.

12. The method of claim 7 wherein the labeled nucleic acid is hybridized to
20 the array in a single reaction.

13. An array of probes comprising at least one probe to each of at least 20,000 different rat transcripts.

- 25 14. The array of claim 13 wherein the array consists of a single contiguous solid support.

15. The array of claim 13 wherein the solid support is a chip.

- 30 16. The array of claim 13 wherein the solid support is a membrane.